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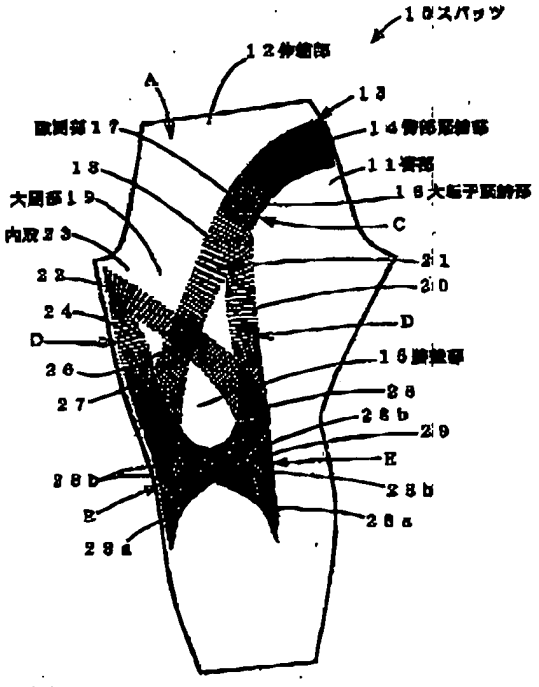
(54)【発明の名称】運動用被服とその製造方法

(57)【要約】

【課題】 運動性や着用感が良好で、身体の各部位に適した形状で適切な強さでサポートすることのできる運動用被服とその製造方法を提供する。

【解決手段】 体表面に密着して着用され伸縮性素材によって構成され、経編のジャガード編により形成され高い伸縮性を有する編み地で形成されている伸縮部１２と、伸縮部１２とは異なる素材構成又は異なる素材構成を有しかつ伸縮部１２より緊締力が高く伸縮性を有する編み地で形成されている緊締部１６とを備えている。緊締部１６の内側には、通気性が高い編み地等で作られた隙間部１７が設けられている。緊締部１６は、緊締力の強弱の必要性に応じて緊締力や伸縮性が異なる区分に分けられ、身体の所望の部位に当接しサポートする所定の形状に形成されている。



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【特許請求の範囲】

【請求項1】 体表面に密着して着用され伸縮性素材によって構成されている運動用被服において、経編のジャガード編により構成され高い伸縮性を有する編み地で形成されている伸縮部と、上記伸縮部とは異なる素材構成又は異なる素材構成を有しかつ上記伸縮部より緊締力が高く伸縮性を有する編み地で形成されている緊締部とが設けられ、上記緊締部内には隙間部が形成され、上記隙間部により上記緊締部が、緊締力の強弱の必要性に応じて緊締力や伸縮性が異なる区分に分けられて設けられ、身体の所望の部位に当接しサポートする形状に形成されたことを特徴とする運動用被服。

【請求項2】 上記緊締部は帯状で、人体の大臀筋と中臀筋の上方に沿って上方に湾曲する円弧状に形成され、この円弧状の両端部は大転子部分に達し、各大転子部分と両脚の内側のつけね付近から各々一対の上記緊締部が、大腿部中央に向かって内側広筋と外側広筋に沿って斜めに延出し膝蓋部上方付近で互いに交差し、膝蓋部の両脇を通って膝蓋部靭帯部分で交差し、膕腹筋に沿って下腿部の両側に達し、各大転子部分から別の緊締部が大腿部の長手方向に沿って延出し膝蓋部の外側側方に達し、両足の内側のつけね付近からは、別の緊締部が大腿部の長手方向に沿って延出し、膝蓋部の内側側方に達していることを特徴とする請求項1記載の運動用被服。

【請求項3】 上記緊締部の内側に設けられた上記隙間部は、伸縮性が高く緊締力が低い編み地で形成され、上記緊締部は上記隙間部との面積比により緊締力が任意に設定され、上記隙間部は線状パターンの組み合わせで形成され、その線の方向や長さを、身体の部位毎に適切に設定することにより緊締力や方向性を任意に設定可能としたことを特徴とする請求項1又は2記載の運動用被服。

【請求項4】 上記隙間部は、上記緊締部の他の部分よりも通気性が良いことを特徴とする請求項1，2又は3記載の運動用被服。

【請求項5】 上記隙間部は上記緊締部に散在し、上記隙間部の大きさや間隔を部位毎に適切に設定することにより上記緊締部の緊締力を任意に設定可能としたことを特徴とする請求項1，2，3又は4記載の運動用被服。

【請求項6】 体表面に密着して着用される伸縮性素材によって構成されている運動用被服の製造方法において、経編のジャガード編からなる地編が非弾性糸で編まれ、さらに弾性糸が挿入されるか又は弾性糸が編こまれてなる経編地からなる伸縮部と、上記伸縮部とは異なる素材構成を有しかつ上記伸縮部より緊締力が高く伸縮性を有するような経編地からなる緊締部と、上記緊締部内に設けられ通気性が高い経編地からなる隙間部とを、連続して一体に編み、上記緊締部が身体の所望の部位に当接しサポートする形状に編むことを特徴とする運動用被服の製造方法。

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【請求項7】 上記編み地の編み密度の調整、編み組織の変化、編み糸本数の変更、または編み糸種類の変更を適切に設定して、所望の位置で緊締力を所定の値に設定されるように編むことを特徴とする請求項6記載の運動用被服の製造方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】この発明は、各種の運動競技やそれに準じる運動等をするために着用される運動用被服とその製造方法に関する。

【0002】

【従来の技術】運動等で障害を受けた関節は障害の完治後も、運動等により同じ障害を再発する場合がある。そこで、一般には粘着テープを障害を受けた部分に巻き、保護、補強することによって障害の再発を防止するテーピング手法が用いられている。このようにテーピングは障害を受けた関節の再発予防に有効なものであるが、テーピングは、本来解剖学原理に基づいて靭帯や腱の走行に沿ってテープを張ることによって靭帯や腱を補強することを基本としているため、テーピング方法は身体の筋肉の形状、方向に密接に関わっており、より大きな効果を得るためにはできるだけ必要な部位、方向に適切な張力を得るのが理想である。特に運動時には障害のない部分まで、筋肉の運動を制限するのは筋肉に不要な負担をかけ、また運動能力の低下を招き好ましくない。このため実際にこれを行うには身体に関する専門的な知識が必要となり、容易ではなかった。また、テーピングを施す部位によっては、テーピング時に他の者の補助を必要とする場合もあった。

【0003】そこでこの問題を解決するため、伸縮性を有し体表面に密着して着用される下半身用被服で、サポート機能を持たせたものがあった。このような下半身用被服は、サポート機能を持たせるために、緊締力を大きくしたい部分に適宜の当て布を取り付けたり切り替えたり、また弾力性のある合成樹脂液を塗布する方法も提案されている。

【0004】また近年は、下半身用被服を丸編や経編のジャガード編で設け、緊締力を大きくしたい部分の編組織を変化させて緊締力を大きくし、サポート機能を持たせる試みが提案されている。このような下半身用被服としては、特開2000-8203号公報に開示されている体型補正機能又は筋肉サポート機能を有する衣類があった。これは、身体に密着して着用される衣類であり、この衣類は経編のジャガード編機により編まれた伸縮性を有する経編地に、緊締力を大きくしたい部分の編組織を変化させて緊締力を大きくし、サポート機能を持たせている。そして、緊締力が強い部分はパターン状に設けられ、このパターンは、帯状やカーブした連続パターンである。

【0005】

【発明が解決しようとする課題】上記従来の技術の場合、当て布や切り替えをして緊締力が強い部分を作る場合は、縫製を行うことにより縫い目部分が伸縮性を制限するため、人体の動きを妨げるという問題があった。また、縫い代が多いため縫い代が体を圧迫するため着用感が損なわれるものであった。また、合成樹脂液を塗布する方法は、編み地の編み目をふさいでしまうため、通気性が低下し蒸れやすいという問題があった。

【0006】そして、丸編を用いる方法は、伝線しやすく耐久性に問題がある。また経編のジャガード編を用いる方法は、緊締力の大きい部分は、編み目が密であるため通気性が低下して蒸れやすいため、着用感が良くなかった。そして帯状に設けられた緊締力の大きい部分は緊締力が均一であり、必要な部位に適切な緊締力を与えることが難しく、人体の動きが制限されるという問題がある。

【0007】この発明は上記従来の問題点に鑑みてなされたものであり、運動性や着用感が良好で、身体の各部位に適した形状で適切な強さでサポートすることのできる運動用被服とその製造方法を提供することを目的とする。

【0008】

【課題を解決するための手段】この発明の運動用被服は、体表面に密着して着用され伸縮性素材によって構成されている運動用被服であり、経編のジャガード編により形成され高い伸縮性を有する編み地で形成されている伸縮部と、上記伸縮部とは異なる素材構成又は異なる素材構成を有しかつ上記伸縮部より緊締力が高く伸縮性を有する編み地で形成されている緊締部とを備えている。上記緊締部の内側には、通気性が高い編み地等で作られた隙間部が設けられ、上記緊締部は、緊締力の強弱の必要性に応じて緊締力や伸縮性が異なる区分に分けられて設けられ、身体の所望の部位に当接しサポートする所定の形状に設けられている。そして、上記隙間部の編み地は上記伸縮部の編み地と同じでも良い。

【0009】また、上記緊締部は帯状で、人体の大臀筋と中臀筋の上方に沿って上方に湾曲する円弧状に形成され、この円弧状の両端部は大転子部分に達し、各大転子部分と両脚の内側のつけね付近から各々一対の上記緊締部が、大腿部中央に向かって内側広筋と外側広筋に沿って斜めに延出し膝蓋部上方付近で互いに交差し、膝蓋部の両脇を通って膝蓋靭帯部分で交差し、腓腹筋に沿って下腿部の両側に達し、各大転子部分からは別の緊締部が大腿部の長手方向に沿って延出し膝蓋部の外側側方に達し、両足の内側の付け根付近からも別の緊締部が大腿部の長手方向に沿って延出し、膝蓋部の内側側方に達している。

【0010】また、上記緊締部の内側に設けられた上記隙間部は、伸縮性が高く緊締力が低い編み地で設けられ、上記緊締部は上記隙間部との面積比により緊締力が任意に設定され、上記隙間部は、線状パターンの組み合わせで形成され、その線の方向、長さを、身体の部位毎に適切に設定することにより緊締力、方向性を任意に設定する。

【0011】また、上記隙間部は水玉状等で散在して設けられ、上記水玉等の大きさや間隔を部位毎に適切に設定することにより上記緊締部の緊締力を任意に設定する。

【0012】またこの発明の運動用被服の製造方法は、体表面に密着して着用される伸縮性素材によって構成されている運動用被服の製造方法において、経編のジャガード編からなる地編が非弾性糸で編まれ、さらに弾性糸が挿入されてなる経編のジャガード編からなる高い伸縮性を有する伸縮部と、上記伸縮部とは異なる素材構成又は異なる素材構成を有しかつ上記伸縮部より緊締力が高く伸縮性を有するような経編のジャガード編からなる緊締部と、上記緊締部の内側に設けられ通気性が高い経編のジャガード編からなる隙間部とを、連続して一体に編み、上記緊締部が身体の所望の部位に当接しサポートする形状に編む。そして、上記編み地の編み密度の調整、編み組織の変化、編み糸本数の変更、または編み糸種類の変更を適切に設定して、所望の位置で緊締力を所定の値に設定されるように編む。

【0013】この発明の運動用被服は、緊締部の内側に通気性が高い編み地で作られた隙間部が形成され、この隙間部により汗や熱が発散され、快適に着用される。また、隙間部は伸縮性が高く緊締力が低い編み地で作られ、隙間部を任意のパターンで設けることにより緊締部の緊締力や、緊締力が働く方向を調節する。

【0014】

【発明の実施の形態】以下、この発明の実施形態について図面に基づいて説明する。図1、図2はこの発明の第一実施形態を示すもので、この実施形態の運動用被服は、ウエストラインから踝に達するスパッツ10である。スパッツ10の表面で一番広い面積を占め、高い伸縮性を有する編み地で形成されている伸縮部12は、組織Aで形成されている。組織Aは編地であり、一単位区画当たりに非弾性糸2本で編まれた地編に弾性糸4本が編み込まれ、高い伸縮性と適度な通気性を有している。そして、伸縮部12以外の部分は、その他の編組織B，C，D，Eで形成された緊締部として設けられ、以下にこの各緊締部について説明する。

【0015】まず、スパッツ10の臀部11には、大殿筋と中臀筋の上方に沿って上方に湾曲する円弧状に、臀部緊締部14が形成されている。臀部緊締部14は、組織Bで形成されている。組織Bは、一単位区画当たりに非弾性糸2本で編まれた地編に弾性糸6本が編み込まれた厚地をベースとし、この厚地に伸縮部12の組織Aと同じ薄地が細かい水玉状に散在して配置された隙間部1

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3が形成されている。組織Bは、厚地を広く使用することで高い緊締力を有し、そして水玉状の隙間部13から汗や熱を発散させる。

【0016】そして臀部緊締部14の両端部は大殿骨と股関節の結合部である大転子付近に延出し、矩形の大転子緊締部16が各一個形成されている。大転子緊締部16は組織Cで形成されている。組織Cは組織Bと同じ厚地をベースとしこの厚地に組織Aと同じ薄地が放射線状に入れられた隙間部17が形成されている。大転子緊締部16は、腰の位置を保つために厚地の部分を設け、編み地のストレッチの方向をコントロールする。そして隙間部17は放射状の直線で設けられているため、大転子緊締部16が固くならず身体にフィットする。

【0017】そして、一対の大転子緊締部16から、膝蓋部15の上方に達する外側広筋緊締部18と、膝蓋部15の下方に達する腸脛靭帯緊締部20が形成されている。外側広筋緊締部18と腸脛靭帯緊締部20は、いずれも組織Dで形成されている。組織Dは組織Bと同じ厚地を帯状に形成し、この帯状の長手方向に対してほぼ直角に組織Aと同じ薄地で作られた線状の隙間部21が設けられ、縞模様を形成している。組織Dは、図3に示すように隙間部21の幅や間隔を変えることで伸縮性と緊締力を変化させることができる。また、隙間部21対して直角方向に伸びやすくなるため、隙間部21の角度を変えることにより伸縮方向を変えることが出来る。

【0018】まず外側広筋緊締部18は、大転子緊締部16に近づくにつれて隙間部21の幅が狭くなり、緊締力が強いものとなる。そして大腿部19の中程のところでは隙間部21の幅が広くなり緊締力は少し低くなり、膝蓋部15に近づくにつれて再び隙間部21の幅が狭くなり、緊締力が強いものとなる。これにより外側広筋緊締部18の中央付近は伸縮性が向上し、伸びへの対応力が向上し、運動動作時のずれが減少する。

【0019】そして腸脛靭帯緊締部20は、大転子緊締部16近傍で、線状の隙間部21が、図1において腸脛靭帯緊締部20の長手方向に対して右上がりに傾斜して設けられている。これにより、腸脛靭帯緊締部20の大転子緊締部16近傍は、身体の上下方向に強い緊締力が生じ、身体の前後方向に弱い緊締力が生じ、運動追従性が良好となる。そして、膝蓋部15の近傍では隙間部21の幅が狭くなり、緊締力が強いものとなる。

【0020】そして、大腿部の内股23側には、脚のつけねから膝蓋部15の上方に達する長内転筋緊締部22と、脚のつけねから膝蓋部15の下方に達する内側広筋緊締部24が形成されている。長内転筋緊締部22と内側広筋緊締部24は、いずれも組織Dで形成されている。

【0021】まず、長内転筋緊締部22は、足の付け根に近づくにつれて隙間部21は図1において右上がりに垂直に近い角度に傾斜して設けられて身体の上下方向の

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緊締力がより強くなっている。そして内股23の中程で、隙間部21は長内転筋緊締部22の長手方向に対してほぼ直角に設けられ、そして隙間部21の幅が広くなり、緊締力は低くなる。そして、膝蓋部15に近づくにつれて隙間部21の幅が狭くなり、再び緊締力が強くなっている。

【0022】そして内側広筋緊締部24は、足のつけね側で緊締力が弱く、内股23の中程で緊締力がわずかに強くなり、膝蓋部15までほとんど均一な緊締力となる。

【0023】ここで、外側広筋緊締部18は大腿部19の中間広筋と縫工筋をサポートし、腸脛靭帯緊締部20は大腿部19の下方外側の外側広筋をサポートしている。長内転筋緊締部22は内股23の長内転筋と内側広筋をサポートし、内側広筋緊締部24は薄筋をサポートしている。これにより外側広筋と内側広筋は、外側広筋緊締部18と長内転筋緊締部22にX状にサポートされ、筋肉を下から持ち上げX字状に交差した方向に引き上げられている。

【0024】次に、外側広筋緊締部18と長内転筋緊締部22は膝蓋部15の上方の大腿四頭筋（膝上）で交差し、外側広筋緊締部18と長内転筋緊締部22の交差部分は大腿四頭筋緊締部26となっている。大腿四頭筋緊締部26は、組織Bで形成され強いサポート力を有し、大腿直筋で運動時に局部的に力のかかる大腿四頭筋を局部的にサポートし、腱のダメージを防いでいる。そして大腿四頭筋緊締部26には互いに交差した一対の線状の隙間部27が形成され、適度な伸縮性を有している。このため着用時に容易に立体的となり、各動きに対応することができる。

【0025】外側広筋緊締部18と長内転筋緊締部22は、各々大腿四頭筋緊締部26の下方に延出し、膝蓋部15の両側を通り膝蓋部15の下方に沿って半円状にサポートする膝下緊締部28となる。そして膝下緊締部28の下端部は、膝の両側から下方に三角形状に延出する一対の下腿緊締部28aが形成されている。

【0026】膝下緊締部28の膝蓋部15に隣接する部分と下腿緊締部28aは、臀部緊締部14と同じ組織Bで設けられている。組織Bは、強いサポート力を有し、固定に近い状態となる。そして、膝下緊締部28には膝蓋部15を中心として左右対称に複数の線状の隙間部29が形成され、適度な伸縮性を有している。このため、着用時に容易に立体的となり、各動きに対応することができる。また、膝蓋部15は固定しないため、伸縮部12となっている。そして膝下緊締部28は、膝蓋腱を局部的に強くサポートすることにより、互いに連続する膝上の大腿四頭筋と膝下の膝蓋腱を保護し、膝蓋部15の炎症と大腿直筋の肉離れを防いでいる。そして、膝下緊締部28の下方に延出する下腿緊締部28aは、腓腹筋、ヒラメ筋、前脛骨筋の上部にかけてサポートする。

【0027】また、膝下緊締部28の、膝蓋部15よりも少し下側の両脇の側縁部28bは、組織Eで形成されている。組織Eは、組織Bと同じ厚地をベースとし、この厚地に上記実施形態の組織Aと同じ薄地が水玉状に配置された隙間部29が形成されている。水玉状の隙間部29の大きさは、膝下緊締部28に使われている組織Eの隙間部13よりも大きく形成され、緊締力は組織Eに比べてやや劣るが汗や熱の発散がより効率よく行われる。

【0028】この実施形態の運動用被服の作り方は、スパッツ10の伸縮部12を作る経編のジャガード編機により、組織Aの薄地と組織Bの厚地が所定パターンに配置されるように設定して、スパッツの編み地を自動に各緊締部と一体に編み上げる。編組織は、経編のジャガード編からなる非弾性糸2本で編まれた地編に、編み込む弾性糸の振り量を変化させて一単位区画当たりの弾性糸の本数を変化させ、この組織の変化により編み地の厚さ、伸縮性、緊締力を変える。そして、このように編み上げられた編み地を所定の手順で両脚分つなぐように縫製し、スパッツ10を作る。

【0029】この実施形態の運動用被服によれば、薄地の伸縮部12に連続して厚地の変化組織を設けて継ぎ目なく各緊締部を形成し、着用するだけで人体の所望の部分をサポートすることができる。これにより、運動、動作に伴う局部的な圧迫や、抵抗を大幅に減らすことができる。また、各緊締部は経編のジャガード編機に所定のパターンを設定するだけで、緊締力と伸縮方向、通気性が異なる経編のジャガード編みによる組織B、C、Dを簡単に短時間で形成し、任意の部位に適切な緊締力を与えることができる。経編のジャガード編により厚地の部分を形成すると各緊締部の編み組織が密となり通気性が悪くなるが、隙間部21を設けることで通気性を確保し、汗や熱を発散し快適に運動することができる。また隙間部21により各緊締部に適度な柔軟性を与えることができ、身体にフィットし運動追従性が向上する。

【0030】臀部緊締部14と大腿四頭筋緊締部26、膝下緊締部28は組織B、組織Eで設けられ、強い緊締力を有し、また汗や熱の発散を効率よく行うことができ、着用感が良好である。組織B、組織Eは、水玉状の隙間部13、29の大きさや間隔を変えることにより、緊締力や通気性を任意に設定することができる。

【0031】外側広筋緊締部18、長内転筋緊締部22、内側広筋緊締部24は、組織Dと高緊締部32が組み合わされて設けられ、適度な柔軟性を有するため運動追従性が良好で、なおかつ高緊締部が確実に身体をサポートする。また、組織Dは隙間部21が網模様を形成して設けられているため、隙間部21の幅や角度を変えることにより緊締力を微調整し、伸縮しやすい方向を任意に設定することができる。

【0032】さらに、この運動用被服は、障害の発生を防止するとともに、長時間の連続的な運動、例えば登山のような活動時間のほとんどを連続的に運動を繰り返すものについても疲労軽減に効果を有する。また、血流促進（静脈環流促進）にも効果があり、長時間の着用においても快適さを維持できる。

【0033】次に、この発明の第二実施形態について、図4に基づいて説明する。ここで、上述の実施の形態と同様の部材は同様の符号を付して説明を省略する。この実施形態の運動用被服は、ウエストラインから踝に達するスパッツ30である。

【0034】臀部緊締部14に連続する大転子緊締部16は、組織Cで設けられている。組織Cは、組織Bと同じ厚地をベースとしこの厚地に組織Aと同じ薄地が放射線状に入れられて隙間部17が形成されている。

【0035】そして一対の大転子緊締部16から膝蓋部15の上方に達する外側広筋緊締部18は、組織Dで形成され、隙間部21により線状に形成された厚地部分の幅は、大転子緊締部16に近づくにつれて広くなり、緊締力が強いものとなる。そして外側広筋緊締部18には、図4において左側の側縁部に、外側広筋緊締部18の長手方向に沿って厚地部分が互いに連結して帯状となる高緊締部32が形成されている。高緊締部32は、大転子緊締部16に近づくにつれて外側広筋緊締部18の長手方向に対して直角方向が長くなっている。このように、組織Dの端部に高緊締部32が設けられる場合、図5、図6に示すように、伸縮方向が均一ではなく高緊締部32側へ湾曲する。これを利用し、外側広筋緊締部18は脚を前に上げたり屈伸したりすることが容易でなおかつ強い緊締力を維持する。

【0036】また、一対の大転子緊締部16から膝蓋部15の下方に達する腸脛靭帯緊締部20は、組織Dで形成されている。

【0037】そして大腿部19の内股23側に設けられ、脚のつけねから膝蓋部15の上方に達する長内転筋緊締部22と、脚のつけねから膝蓋部15の下方に達する内側広筋緊締部24は、組織Dで形成されている。そして、長内転筋緊締部22と内側広筋緊締部24には、図4において右側の側縁部に、各緊締部の長手方向に沿って高緊締部34、36が設けられている。高緊締部34、36は、膝蓋部15に近づくにつれて幅広に形成されている。

【0038】この実施形態のスパッツ30の作り方は、上記実施の形態と同様であり、同様の効果を有するものである。そして、外側広筋緊締部18、長内転筋緊締部22、内側広筋緊締部24は、組織Dと高緊締部32が組み合わされて設けられ、適度な柔軟性を有するため運動追従性が良好で、なおかつ高緊締部が確実に身体をサポートする。また、組織Dは隙間部21が網模様を形成して設けられているため、隙間部21の幅や角度を変えることにより緊締力を微調整し、伸縮しやすい方向を任

量に設定することができる。

【0039】なお、この発明の運動用被服とその製造方法は、上記実施形態に限定されるものではなく、例えば緊締力を調整する方法は、編み方や編み糸の本数を変更する以外に、編み糸の種類（太さ、断面形状、組成、伸縮加工、弾性等）を編成途中で変更しても良い。そして、組織Dにより設けられた緊締部の伸縮方向を変化させる方法として、図7、図8に示すように緊締部38の長手方向に沿って中心を貫通して線状の高緊締部40が設けられても良い。そして、各緊締部の原地に設けられる隙間部のパターンは上記各実施形態の各組織に限定されるものではない。例えば、図9に示す緊締部42ように緊締部42を三角形のドットに切り残すジグザグ線の隙間部44や、図10に示す緊締部46ような枝状の隙間部48、図11に示す緊締部50ように緊締部50の長手方向に対して傾斜した縞模様の隙間部52等、自由に変更可能である。

【0040】また、運動用被服の各緊締部の配置は、適した部位に設けられていれば良く、図12に示すように脚の外側側面に緊締部54が設けられ、緊締部54は上下方向に伸びる高緊締部54aと、高緊締部54aに沿って前側に取り付けられた組織Dからなる低緊締部54bから成るものでも良い。この場合は膝部15の屈伸により内側調と外側長に著しい差が生じるが、緊締力を保ちつつ屈伸運動を抑制しないものである。また、図13に示すように腰部25に緊締部56が設けられ、緊締部56は腰部25の前中心を上下方向に伸びる高緊締部56aと、高緊締部56aを挟んで左右に取り付けられた組織Dからなる低緊締部56bを設けても良い。さらに、この緊締部56は、ふくらはぎ部に設けても良い。

【0041】

【発明の効果】この発明の運動用被服は、経編のジャガード編により短時間に効率よく作ることができ、着用するだけで人体の各部分を最適な状態でサポートするテーピング機能が得られ、スポーツ障害を防ぐものである。そして、緊締部には通気性と柔軟性を有する隙間部が設＊けられ、着心地と密着性、通気性が良好で運動性能が向上する。また、隙間部の形状や面積比を細かく設定することにより、緊締部の緊締力を調整することができる。

【図面の簡単な説明】

【図1】この発明の第一実施形態の運動用被服の縫製する前の状態を示す正面図である。

【図2】この実施形態の運動用被服の左側面図である。

【図3】この実施形態の組織Dにより設けられた緊締部の模式図である。

【図4】この発明の第二実施形態の運動用被服の縫製する前の状態を示す正面図である。

【図5】この実施形態の組織Bと組織Dにより設けられた緊締部の模式図である。

【図6】図5の緊締部が伸びた状態を示す模式図である。

【図7】この発明の組織Bと組織Dにより設けられた緊締部の変形例の模式図である。

【図8】図7の緊締部が伸びた状態を示す模式図である。

【図9】この発明の緊締部の変形例の模式図である。

【図10】この発明の緊締部の変形例の模式図である。

【図11】この発明の緊締部の変形例の模式図である。

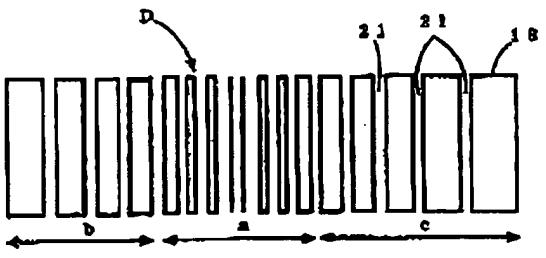
【図12】この発明の緊締部の変形例の模式図である。

【図13】この発明の緊締部の変形例の模式図である。

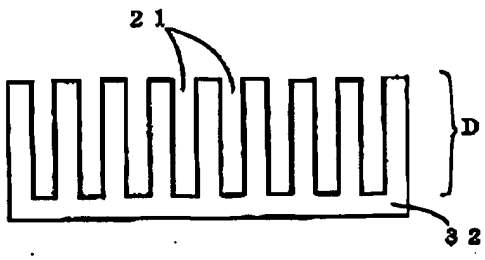
【符号の説明】

10 スパッツ
12 伸縮部
14 臀部緊締部
16 大転子緊締部
18 外側広筋緊締部
17, 21, 27, 29 隙間部
20 腸脛靭帯緊締部
22 長内転筋緊締部
24 内側広筋緊締部
26 大腿四頭筋緊締部
28 膝下緊締部

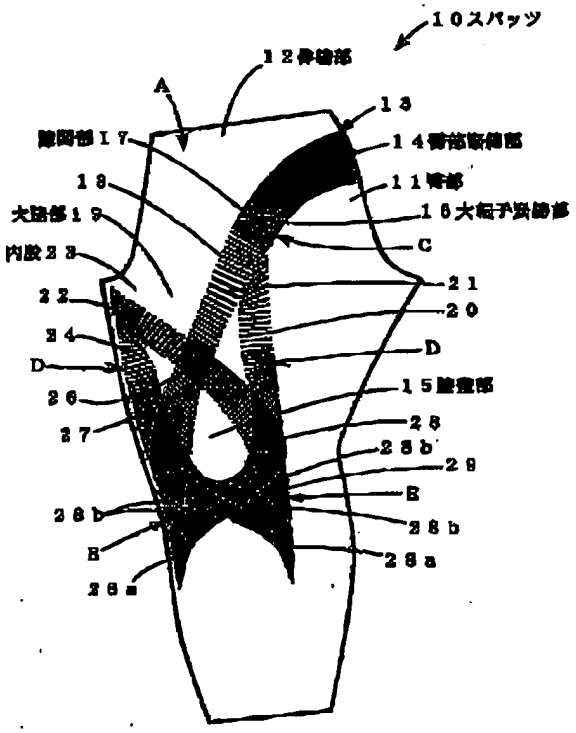
【図3】



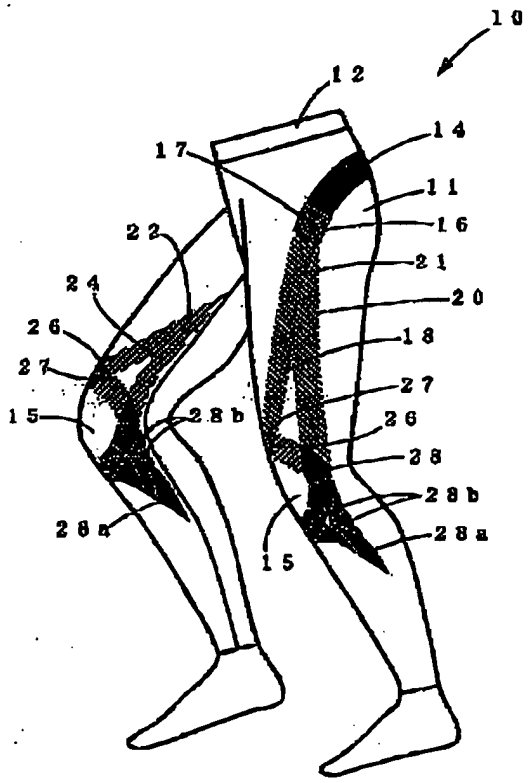
【図5】



【図1】


10スパッツ
12脚部
A
13
14脚部取付部
11脚部
16大転子装飾部
C
21
20
D
15膝蓋部
28
28b
29
E
28b
28a
17
18
19
23
22
24
26
27
28b
E
28a

【図2】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12
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28b
28a
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24
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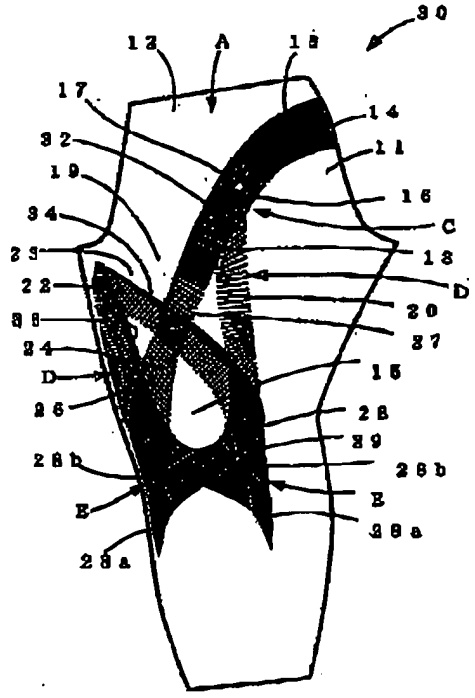
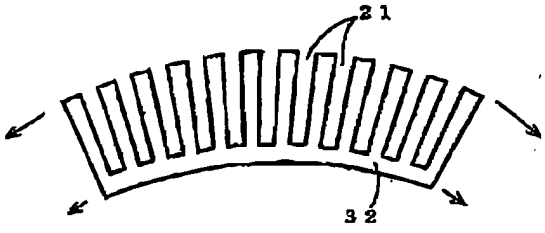
27
15
28b
28a

【図4】


30
12
A
13
14
11
16
C
18
D
20
27
15
28
29
28b
E
28a
17
32
19
34
23
22
24
D
26
28b
E
28a

【図6】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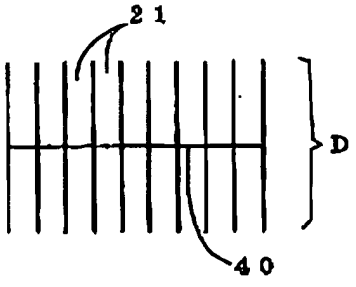
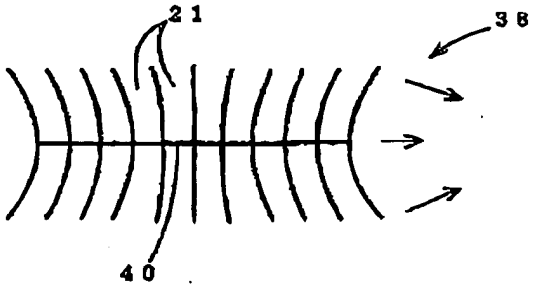
32

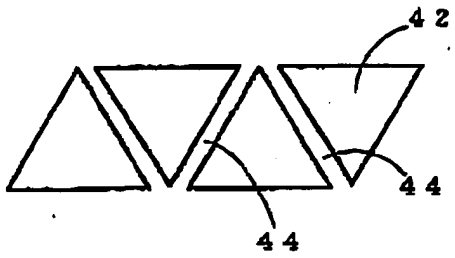
【図7】


21
38
D
40

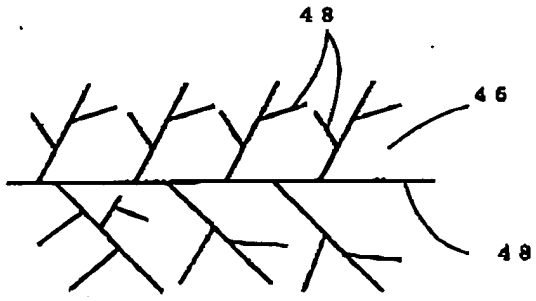
【図8】



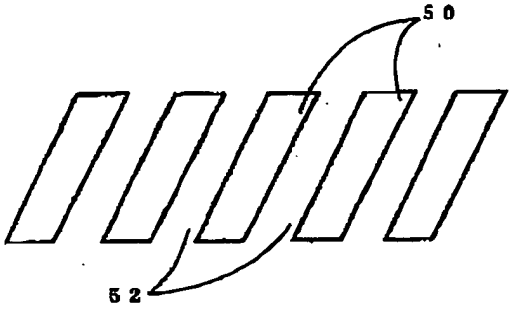
【図9】



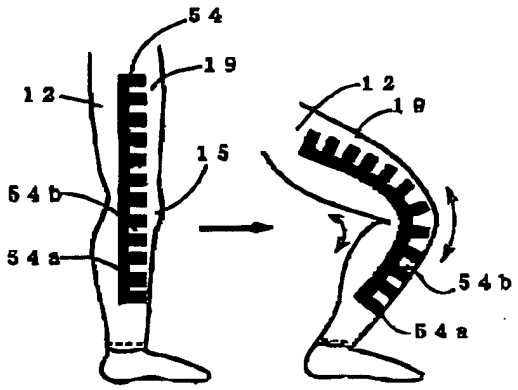
【図10】



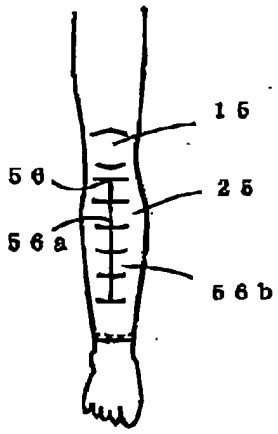
【図11】



【図12】



【図13】



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	13/06			13/06	
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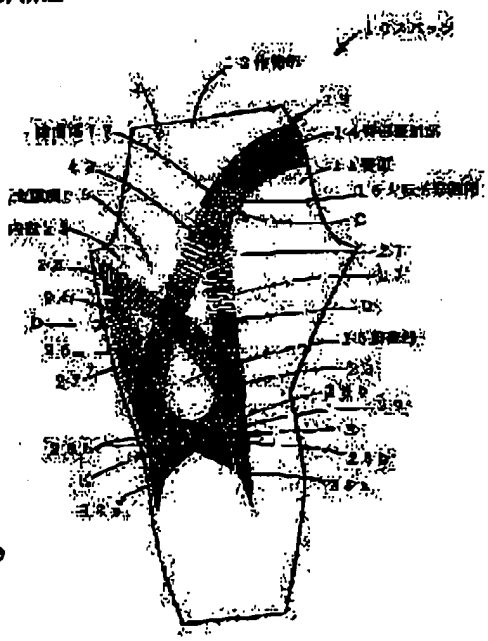
(54) CLOTHES FOR EXERCISE AND METHOD FOR PRODUCING THE SAME

(57)Abstract:
PROBLEM TO BE SOLVED: To obtain clothes for exercise providing an improved follow-up to the movement of a body and a feeling of wearing, which support a each part of the body at proper strength and to provide a method for producing the same.
SOLUTION: The clothes are worn in a stuck state to the surface of the body, constituted of a stretchable material and provided with an extension and contraction part 12 composed of a knitted fabric having high stretchability by jacquard knitting of warp knitting and a tightening part 16 composed of a knitted fabric having a material constitution different from that of the extension and contraction part 12 or has the different material constitution and higher tightening force than that of the extension and contraction part 12 and stretchability. A gap part 17 composed of a knitted fabric having a high air permeability, etc., is arranged inside the tightening part 16. The tightening part 16 is divided into divisions different in tightening force and stretchability according to the necessity of strength of tightening force and made into a fixed shape which is brought into contact with the desired parts of the body and supports the body.



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CLAIMS

[Claim(s)]
[Claim 1]Clothing for movement characterized by comprising the following which sticks to a body surface, is worn and is constituted with an elastic raw material.
An elastic section which is constituted by jacquard editing of warp knitting and has high elasticity and which knits and is formed with a background.
Have different material constitution or different material constitution, and binding power is higher than the above-mentioned elastic section, and the above-mentioned elastic section is elasticity.

[Claim 2]The above-mentioned binding part is beltlike and it is formed in the shape of [which curves up along the upper part of a gluteus maximus of a human body, and a gluteus medius] a circle, These circular both ends reach a trochanger-major portion, and respectively from the neighborhood in the price inside each trochanger-major portion and a biped the above-mentioned binding part of a couple, In accordance with musculus vastus medialis and musculus vastus lateralis, extend aslant toward a center of a femoral region, and it crosses mutually near the patella upper part, Cross in a patella ligament portion through both the sides of a patella, and both sides of a crus part are reached along with gastrocnemius, The clothing for movement according to claim 1 another binding part's having extended along with a longitudinal direction of a femoral region from each trochanger-major portion, and having arrived at the outside side of a patella, and another binding part's having extended along with a longitudinal direction of a femoral region from the neighborhood in the price inside both legs, and having arrived at the inside side of a patella.
[Claim 3]The above-mentioned gap part provided inside the above-mentioned binding part, elasticity is high and binding power is low — it knitting and being formed with a background, and binding power being arbitrarily set up by surface ratio with the above-mentioned gap part, and the above-mentioned binding part, The clothing for movement according to claim 1 or 2, wherein the above-mentioned gap part enables setting out of binding power or directivity arbitrarily by being formed in combination of a linear pattern and setting up a direction and length of the line appropriately for every part of the body.
[Claim 4]The clothing for movement according to claim 1, 2, or 3, wherein the above-mentioned gap part has breathability better than other portions of the above-mentioned binding part.
[Claim 5]The clothing for movement according to claim 1, 2, 3, or 4, wherein the above-mentioned gap part enables setting out of binding power of the above-mentioned binding part arbitrarily by being scattered in the above-mentioned binding part, and setting up a size and an interval of the above-mentioned gap part appropriately for every part.
[Claim 6]In a manufacturing method of clothing for movement constituted with an elastic raw material worn by sticking to a body surface, or ground editing which consists of jacquard editing of warp knitting is knit with inelastic thread and elastic yarn is inserted further — or elastic yarn — ********** — with an elastic section which consists of warp-knit material, A binding part which consists of warp-knit material which has different material constitution from the above-mentioned elastic section, and binding power is higher than the above-mentioned elastic section, and has elasticity, A manufacturing method of clothing for movement knitting continuously a gap part which is established in the above-mentioned binding circles and consists of warp-knit material with high breathability to one, and knitting it in shape which the above-mentioned binding part supports in contact with a part of a request of the body.
[Claim 7]A manufacturing method of the clothing for movement according to claim 6 which it adjusts and density knits, it changes, and an organization knits [the account of the upper knits, and / a ground knits,], and is

characterized by change of a thread number, or knitting, and knitting so that change of thread types may be set up appropriately and binding power may be set as a predetermined value in a desired position.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the clothing for movement worn in order to carry out movement according to various kinds of athletic sports or it, etc., and its manufacturing method.
[0002]
[Description of the Prior Art]The joint which received the obstacle by movement etc. may recur the same obstacle by movement etc. even after a complete recovery of an obstacle. Then, the taping technique which prevents the recurrence of an obstacle is used by winding adhesive tape around the portion which received the obstacle, and generally, protecting and reinforcing it. Thus, although taping is effective in recurrence prevention of the joint which received the obstacle, Since taping is based on reinforcing a ligament and a tendon by originally stretching a tape along with a run of a ligament or a tendon based on an anatomy principle, the taping method has been closely concerned in the shape of the muscles of the body, and the direction.
An ideal obtains the suitable tension for the part required possible in order to acquire a bigger effect, and a direction.
To the portion which does not have an obstacle in particular at the time of movement, restricting muscular movement applies an unnecessary burden to muscles, and it causes the fall of an athletic ability, and is not preferred. For this reason, the special knowledge about the body was needed for actually performing this, and it was not easy. It was, also when you needed other persons' assistance depending on the part which tapes at the time of taping.
[0003]Then, in order to solve this problem, it has elasticity and there were some which gave the support function in the clothing for lower halves of the bodies worn by sticking to a body surface. In order that such clothing for lower halves of the bodies may give a support function, the method of attaching a proper patch, changing and applying the synthetic resin liquid it is [a portion to make binding power greatly] elastic is also proposed.
[0004]The clothing for lower halves of the bodies is formed by jacquard editing of a round braid or warp knitting in recent years, the knitted tissue of a portion to make binding power greatly is changed, binding power is enlarged, and the trial which gives a support function is proposed. There was clothing which has the form correcting function or muscular support funotion currently indicated by JP,2000-8203,A as such clothing for lower halves of the bodies. This is clothing which sticks to the body and is worn.
This clothing changes the knitted tissue of a portion to make binding power greatly, enlarges binding power, and is giving the support function to the warp-knit material which has the elasticity knit by the jacquard knitting machine of warp knitting.
And the portion with strong binding power is provided in pattern state, and this pattern is band-like and a curved consecutive pattern.
[0005]
[Problem(s) to be Solved by the Invention]When in the case of the above-mentioned conventional art carrying out a patch and a change and making a portion with strong binding power, in order that a stitch portion might restrict elasticity by performing sewing, there was a problem of barring a motion of a human body. Since there are many seam allowances, in order that a seam allowance may suppress the body, a feeling of wear is spoiled. In order that the method of applying synthetic resin liquid might be knit and might close the stitch of the ground, there was a problem that breathability was fallen and steamed easily.
[0006]And there is a problem in endurance that the method of using a round braid runs easily. Since breathability fell since the stitch is dense, and the portion in which the method of using jacquard editing of warp knitting of

binding power is large was steamed easily, its feeling of wear was not good. And there is a problem that the portion with large binding power provided in band-like has uniform binding power, it is difficult to give suitable binding power to a required part, and a motion of a human body is restricted.

[0007]This invention is made in view of the above-mentioned conventional problem, and is a thing.

The purpose is to provide the clothing for movement which can be supported by suitable strength in the shape where admiration was good and suitable for each part of the body, and its manufacturing method.

[0008]

[Means for Solving the Problem]Clothing for movement of this invention is provided with the following.

An elastic section which is the clothing for movement which sticks to a body surface, is worn and is constituted with an elastic raw material, is formed of jacquard editing of warp knitting and has high elasticity and which knits and is formed with a background.

A binding part which has different material constitution from the above-mentioned elastic section, or different material constitution, and binding power is higher than the above-mentioned elastic section, and has elasticity and which knits and is formed with a background.

Inside the above-mentioned binding part, a gap part where breathability is high and which knit and was made with a background etc. is provided, and the above-mentioned binding part is divided into classification from which binding power and elasticity differ according to the necessity for strength of binding power, is provided, and is provided in predetermined shape supported in contact with a part of a request of the body. And the above-mentioned gap part may knit, the above-mentioned elastic section may knit a ground and it may be the same as a ground.

[0009]The above-mentioned binding part is beltlike and it is formed in the shape of [which curves up along the upper part of a gluteus maximus of a human body, and a gluteus medius] a circle, These circular both ends reach a trochanger-major portion, and respectively from the neighborhood in the price inside each trochanger-major portion and a biped the above-mentioned binding part of a couple, In accordance with musculus vastus medialis and musculus vastus lateralis, extend aslant toward a center of a femoral region, and it crosses mutually near the patella upper part, Cross in a patellar ligament portion through both the sides of a patella, and both sides of a crus part are reached along with gastrocnemius, From each trochanger-major portion, another binding part extended along with a longitudinal direction of a femoral region, the outside side of a patella was arrived at, another binding part extended along with a longitudinal direction of a femoral region also from near the root inside both legs, and the inside side of a patella is arrived at.

[0010]The above-mentioned gap part provided inside the above-mentioned binding part, It knits, and is provided with a background, as for the above-mentioned binding part, binding power is arbitrarily set up by surface ratio with the above-mentioned gap part, the above-mentioned gap part is formed in combination of a linear pattern, and binding power and directivity are arbitrarily set up by [with high elasticity and low binding power] setting up the direction of the line, and length appropriately for every part of the body.

[0011]By the shape of a dot, etc., the above-mentioned gap parts are scattered, and are provided, and binding power of the above-mentioned binding part is arbitrarily set up by setting up a size and an interval of the above-mentioned dot etc. appropriately for every part.

[0012]In a manufacturing method of clothing for movement constituted with an elastic raw material worn by sticking a manufacturing method of clothing for movement of this invention to a body surface, An elastic section which has the high elasticity which consists of jacquard editing of warp knitting to which ground editing which consists of jacquard editing of warp knitting is knit with inelastic thread, and it comes to insert elastic yarn further, A binding part which consists of jacquard editing of warp knitting which has different material constitution from the above-mentioned elastic section, or different material constitution, and binding power is higher than the above-mentioned elastic section, and has elasticity, A gap part which is provided inside the above-mentioned binding part and consists of jacquard editing of warp knitting with high breathability is continuously knit to one, and is knit in shape which the above-mentioned binding part supports in contact with a part of a request of the body. and — the account of the upper knits, a ground knits, adjust and density knits, and change and an organization knits — change of a thread number — or it knits, and it knits so that change of thread types may be set up appropriately and binding power may be set as a predetermined value in a desired position.

[0013]A gap part where breathability is high, and which knit and was made with a background is formed inside a binding part, sweat and heat are emitted by this gap part, and clothing for movement of this invention is worn

comfortably. As for a gap part, a direction which binding power and binding power of a binding part commit is adjusted by [with low binding power / with high elasticity] knitting, being made with a background and providing a gap part by arbitrary patterns.

[0014]

[Embodiment of the Invention]Hereafter, the embodiment of this invention is described based on a drawing. Drawing 1 and drawing 2 show a first embodiment of this invention, and the clothing for movement of this embodiment is the spats 10 which reach a malleolus from a waist line. The elastic section 12 which occupies the largest area on the surface of the spats 10, and has high elasticity and which knits and is formed with a background is formed in the organization A. The organization A is a thin ground, and four elastic yarn is knit by the volume on ground knit with two inelastic thread per 1 unit blocks, and it has high elasticity and moderate breathability. And portions other than elastic section 12 are provided as a binding part formed by the other knitted tissues B, C, and D and E, and explain each of this binding part below.

[0015]First, the hip binding part 14 is formed in the shape of [which curves up along the upper part of the musculus gluteus maximus and a gluteus medius to the hip 11 of the spats 10] a circle. The hip binding part 14 is formed in the organization B. The organization B uses as a base the thick cloth with which six elastic yarn was knit by the volume on ground knit with two inelastic thread per 1 unit blocks, and the gap part 13 arranged by the thin grounds same to this thick cloth as the organization A of the elastic section 12 being scattered in the shape of [fine] a dot is formed. The organization B has high binding power by using thick cloth widely, and makes sweat and heat emit from the dot-like gap part 13.

[0016]And the both ends of the hip binding part 14 extend near the trochanger major which is a bond part of a main building bone and a hip joint, and the one rectangular trochanger-major binding part 16 is formed each. The trochanger-major binding part 16 is formed in the organization C. The gap part 17 where the organization C used the same thick cloth as the organization B as the base, and it was put into the thin ground same to this thick cloth as the organization A in the shape of radiation is formed. In order to maintain the position of the waist, the trochanger-major binding part 16 provides and knits the portion of thick cloth, and controls the direction of the stretch of the ground. And since the gap part 17 is formed in the radiate straight line, the trochanger-major binding part 16 does not become hard, but it fits the body.

[0017]And the musculus-vastus-lateralis binding part 18 which reaches above the patella 15, and the iliotibial-band binding part 20 of the patella 15 attained caudad are formed from the trochanger-major binding part 16 of the couple. The musculus-vastus-lateralis binding part 18 and the iliotibial-band binding part 20 are formed by each in the organization D. The organization D forms the same thick cloth as the organization B in band-like, and the linear gap part 21 made with the thin background same almost right-angled as the organization A to this band-like longitudinal direction is formed, and it forms the striped pattern. The organization D can change elasticity and binding power by changing the width and the interval of the gap part 21, as shown in drawing 3. Since it receives gap part 21 and becomes easy to be extended to rectangular directions, an expansion and contraction direction is changeable by changing the angle of the gap part 21.

[0018]First, the width of the gap part 21 becomes narrow as the trochanger-major binding part 16 is approached, and the musculus-vastus-lateralis binding part 18 becomes what has strong binding power. And in the place in the middle of the femoral region 19, the width of the gap part 21 becomes large, and it becomes somewhat low, the width of the gap part 21 becomes narrow again as the patella 15 is approached, and binding power becomes what has strong binding power. Thereby, the correspondence power through which elasticity of near [the center of the musculus-vastus-lateralis binding part 18] improves, and it extends and passes improves, and the gap at the time of movement operation decreases.

[0019]And the iliotibial-band binding part 20 is about 16 trochanger-major binding part, and the linear gap part 21 is inclined and established in the upward slant to the right to the longitudinal direction of the iliotibial-band binding part 20 in drawing 1. Thereby, binding power strong against the sliding direction of the body arises, weak binding power arises in the cross direction of the body, and about 16 trochanger-major binding part of the iliotibial-band binding part 20 becomes good [movement flattery nature]. And near the patella 15, the width of the gap part 21 becomes narrow, and it becomes what has strong binding power.

[0020]And the musculus-adductor-longus binding part 22 which reaches above the ** patellas 15 in the price of a leg, and the musculus-vastus-medialis binding part 24 which the ** patellas 15 attain caudad in the price of a leg are formed in the inner-side-of-the-thigh 23 side of a femoral region. The musculus-adductor-longus binding part 22 and the musculus-vastus-medialis binding part 24 are formed by each in the organization D.

[0021]First, the gap part 21 is inclined and established in the angle vertically near an upward slant to the right in

drawing 1, and the binding power of the sliding direction of the body is stronger as the musculus-adductor-longus binding part 22 approaches the root of a leg. And in the middle of the inner side of the thigh 23, the gap part 21 is formed almost right-angled to the longitudinal direction of the musculus-adductor-longus binding part 22, and the width of the gap part 21 becomes large, and binding power becomes low. And the width of the gap part 21 becomes narrow as the patella 15 is approached, and binding power is strong again.

[0022]And binding power is weak in the price of a leg at a side, binding power becomes strong slightly in the middle of the inner side of the thigh 23, and the musculus-vastus-medialis binding part 24 serves as binding power almost uniform to the patella 15.

[0023]Here, the musculus-vastus-lateralis binding part 18 supports the musculus vastus intermedius and sartorius of the femoral region 19, and the iliotibial-band binding part 20 is supporting the musculus vastus lateralis of the lower part outside of the femoral region 19. The musculus-adductor-longus binding part 22 supports the musculus adductor longus and musculus vastus medialis of the inner side of the thigh 23, and the musculus-vastus-medialis binding part 24 is supporting the gracilis muscle. Thereby, the musculus vastus lateralis and the musculus vastus medialis are supported by the musculus-vastus-lateralis binding part 18 and the musculus-adductor-longus binding part 22 in the shape of X, and can be pulled up in the direction which raised muscles from the bottom and crossed in the shape of a X character.

[0024]Next, the musculus-vastus-lateralis binding part 18 and the musculus-adductor-longus binding part 22 cross by the upper quadriceps (on a knee) of the patella 15, and the crossing portion of the musculus-vastus-lateralis binding part 18 and the musculus-adductor-longus binding part 22 serves as the quadriceps binding part 26. The quadriceps binding part 26 was formed in the organization B, had strong support power, supported locally the quadriceps which takes locally in rectus femoris at the time of movement as for power, and has prevented the damage of the tendon. And the linear gap part 27 of the couple which intersected the quadriceps binding part 26 mutually is formed, and it has moderate elasticity. For this reason, it becomes three-dimensional easily at the time of wear, and can respond to each motion.

[0025]The musculus-vastus-lateralis binding part 18 and the musculus-adductor-longus binding part 22 extend under the quadriceps binding part 26 respectively, and turn into the binding-under knee part 28 which the patella 15 meets caudad through the both sides of the patella 15, and is supported to semicircular state. And the leg binding part 28a of the couple to which the lower end part of the binding-under knee part 28 extends from both sides in the knees to triangular shape caudad is formed.

[0026]The portion and the leg binding part 28a which adjoin the patella 15 of the binding-under knee part 28 are provided in the same organization B as the hip binding part 14. The organization B has strong support power and will be in the state near immobilization. And two or more linear gap parts 29 are symmetrically formed in the binding-under knee part 28 considering the patella 15 as a center, and it has moderate elasticity. For this reason, it becomes three-dimensional easily at the time of wear, and can respond to each motion. Since it does not fix, the patella 15 is the elastic section 12. And by supporting a patellar tendon strongly locally, the binding-under knee part 28 protected the quadriceps on the knee which continues mutually, and the patellar tendon under a knee, and has prevented the inflammation of the patella 15, and a pulled muscle of rectus femoris. And it supports, applying the leg binding part 28a which extends under the binding-under knee part 28 to the upper part of gastrocnemius, a soleus muscle, and the musculus tibialis anterior.

[0027]The side edge part 28b of both the lower sides is formed in the organization E for a while rather than the patella 15 of the binding-under knee part 28. The organization E uses the same thick cloth as the organization B as a base, and the gap part 29 where the same thin ground has been arranged in the shape of a dot is formed in this thick cloth with the organization A of the above-mentioned embodiment. The size of the dot-like gap part 29 is formed more greatly than the gap part 13 of the organization E currently used for the binding-under knee part 28, and although binding power is a little inferior compared with the organization E, emission of sweat or heat is performed more efficiently.

[0028]With the jacquard knitting machine of the warp knitting which makes the elastic section 12 of the spats 10, how to make the clothing for movement of this embodiment sets up so that the thin ground of the organization A and the thick cloth of the organization B may be arranged at a prescribed pattern, spats knit it, and it knits up the ground into each binding part and one automatically. A knitted tissue changes the amount of ways of the elastic yarn to knit to the volume on ground knit with two inelastic thread which consists of jacquard editing of warp knitting, changes the number of elastic yarn per 1 unit blocks to it, is knit to it by change of this organization, and changes the thickness of the ground, elasticity, and binding power into it. And sewing is carried out so that it might be knit up in this way, it may knit and the ground may be connected by a biped in a

predetermined procedure, and the spats 10 are made.

[0029]According to the clothing for movement of this embodiment, the change organization of thick cloth can be provided succeeding the elastic section 12 of the thin ground, each binding part can be formed without a joint, and the portion of a request of a human body can be supported only by wearing. Thereby, the local pressure accompanying movement and operation and resistance can be reduced substantially. Each binding part only sets a predetermined pattern as the jacquard knitting machine of warp knitting, can form easily the organization B, C, and D by ** of the warp knitting from which binding power, and an expansion and contraction direction and breathability differ edited by a jacquard in a short time, and can give suitable binding power to arbitrary parts. If the portion of thick cloth is formed by jacquard editing of warp knitting, each binding part will knit, organizing will become dense, and breathability will worsen, but breathability can be secured by forming the gap part 21, sweat and heat can be emitted, and it can exercise comfortably. Moderate pliability can be given to each binding part by the gap part 21, the body is fitted, and movement flattery nature improves.

[0030]The hip binding part 14, the quadriceps binding part 26, and the binding-under knee part 28 are formed in the organization B and the organization E, and have strong binding power, and can perform emission of sweat or heat efficiently, and their feeling of wear is good. The organization B and the organization E can set up binding power and breathability arbitrarily by changing dot-like the size and interval of the gap parts 13 and 29.

[0031]Since the organization D and the high binding part 32 are put together and the musculus-vastus-lateralis binding part 18, the musculus-adductor-longus binding part 22, and the musculus-vastus-medialis binding part 24 have moderate pliability, their movement flattery nature is good, and moreover, a high binding part supports the body certainly. Since the gap part 21 forms a striped pattern and is provided, by changing the width and the angle of the gap part 21, the organization D can tune binding power finely and can set up arbitrarily the direction which are and contracts easy to expand.

[0032]This clothing for movement has an effect against fatigue mitigation also about what repeats movement continuously for most activity time like continuous prolonged movement, for example, mountain climbing, while preventing generating of an obstacle. There is an effect also in blood-flow promotion (promotion of a vein rotary flow), and the amenity can be maintained also in prolonged wear.

[0033]Next, a second embodiment of this invention is described based on drawing 4. Here, the same member as an above-mentioned embodiment attaches the same numerals, and omits explanation. The clothing for movement of this embodiment is the spats 30 which reach a malleolus from a waist line.

[0034]The trochanger-major binding part 16 which follows the hip binding part 14 is formed in the organization C. *** C uses the same thick cloth as the organization B as a base, it is put into the thin ground same to this thick cloth as the organization A in the shape of radiation, and the gap part 17 is formed.

[0035]And the width of the thick cloth portion which was formed in the organization D and formed in the line of the gap part 21 becomes large as it approaches the trochanger-major binding part 16, and the musculus-vastus-lateralis binding part 18 which reaches above the patella 15 from the trochanger-major binding part 16 of a couple becomes what has strong binding power. And in drawing 4, the high binding part 32 which a thick cloth portion connects with a left-hand side side edge part mutually along with the longitudinal direction of the musculus-vastus-lateralis binding part 18, and becomes beltlike is formed in the musculus-vastus-lateralis binding part 18. Rectangular directions are long to the longitudinal direction of the musculus-vastus-lateralis binding part 18 as the high binding part 32 approaches the trochanger-major binding part 16. Thus, when the high binding part 32 is formed in the end of the organization D, as shown in drawing 5 and drawing 6, an expansion and contraction direction curves to the high binding part 32 side rather than is uniform. Using this, the musculus-vastus-lateralis binding part 18 maintains binding power that it is easy to raise, or bend and stretch with a leg near at hand, and strong moreover.

[0036]The iliotibial-band binding part 20 of the patella 15 attained caudad is formed in the organization D from the trochanger-major binding part 16 of the couple.

[0037]And it is provided in the inner-side-of-the-thigh 23 side of the femoral region 19, and the musculus-adductor-longus binding part 22 which reaches above the ** patellas 15 in the price of a leg, and the musculus-vastus-medialis binding part 24 which the ** patellas 15 attain caudad in the price of a leg are formed in the organization D. And in drawing 4, the high binding parts 34 and 36 are formed in the right-hand side side edge part along with the longitudinal direction of each binding part at the musculus-adductor-longus binding part 22 and the musculus-vastus-medialis binding part 24. The high binding parts 34 and 36 are broadly formed as the patella 15 is approached.

[0038]How to make the spats 30 of this embodiment is the same as that of the above-mentioned embodiment,

and has the same effect. And since the organization D and the high binding part 32 are put together and the musculus-vastus-lateralis binding part 18, the musculus-adductor-longus binding part 22, and the musculus-vastus-medialis binding part 24 have moderate pliability, their movement flattery nature is good, and moreover, a high binding part supports the body certainly. Since the gap part 21 forms a striped pattern and is provided, by changing the width and the angle of the gap part 21, the organization D can tune binding power finely and can set up arbitrarily the direction which are and contracts easy to expand.

[0039]The clothing for movement and the manufacturing method of this invention are not limited to the above-mentioned embodiment, and how to knit and besides knitting and changing the number of thread, the method of adjusting binding power, for example may be knit, and may change the kinds (thickness, sectional shape, a presentation, elastic processing, elasticity, etc.) of thread in the middle of organization. And as a method of changing the expansion and contraction direction of a binding part provided by the organization D, as shown in drawing 7 and drawing 8, a center is penetrated along with the longitudinal direction of the binding part 38, and the linear high binding part 40 may be formed. And the pattern of the gap part established in the thick cloth of each binding part is not limited to each organization of each above-mentioned embodiment. for example, the binding part 42 shown in drawing 9 — the gap part 44 of the zigzag line which cuts off the binding part 42 partially to a triangular dot like. the binding part 46 shown in drawing 10 — the gap part 48 of the shape of a branch [like], and the binding part 50 shown in drawing 11 — the gap part 52 grade of the striped pattern inclined [like] to the longitudinal direction of the binding part 50 — it can change freely.

[0040]The high binding part 54a to which arrangement of each binding part of the clothing for movement should just be provided in the part for which it was suitable, the binding part 54 is formed in the outer flank of a leg as shown in drawing 12, and the binding part 54 is extended to a sliding direction. The low binding part 54b which was attached to the front side along with the high binding part 54a and which consists of the organization D may be comprised. In this case, although a remarkable difference arises in an inside tone and outside length by expansion and contraction of the patella 15, bending and stretching exercises are not controlled, maintaining binding power. As shown in drawing 13, the binding part 56 is formed in the leg part 25, and the binding part 56 may form the high binding part 56a extended to a sliding direction in Shin Maenaka of the leg part 25, and the low binding part 56b which were attached to right and left on both sides of the high binding part 56a and which consists of the organization D. This binding part 56 may be formed in a sural-region part.

[0041]

[Effect of the Invention]It can make efficiently by jacquard editing of warp knitting in a short time, the taping function which supports each portion of a human body in the optimal state only by wearing is obtained, and the clothing for movement of this invention prevents dyskinesia. And the gap part which has breathability and pliability is established in a binding part, feeling of wearing, adhesion, and breathability are good, and motion performance improves. The binding power of a binding part can be adjusted by setting up the shape and surface ratio of a gap part finely.

[Translation done.]